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60,130-788

UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: Fowler, et al.

GROUP ART UNIT: 3618

SERIAL NO.: 09/833,165

EXAMINER: Addison, Karin B.

FILED: April 11, 2001

FOR: SOLID BODY INDUCTION MOTOR  
FOR VEHICLE APPLICATIONS

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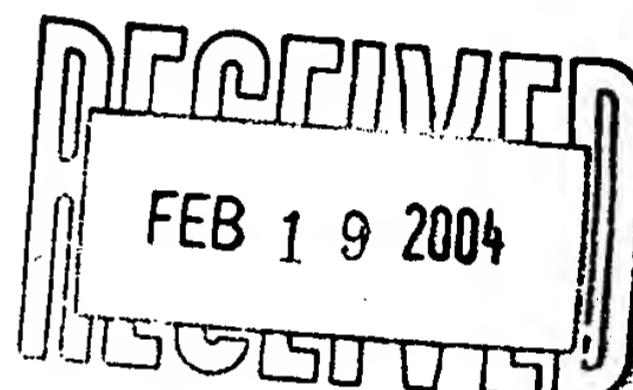
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APPEAL BRIEF



Dear Sir:

Subsequent to the filing of the Notice of Appeal on November 19, 2003, Appellant hereby submits its brief. Enclosed is a check for the appeal brief fee. Any additional fees or credits may be charged or applied to Deposit Account No. 50-1482 in the name of Carlson, Gaskey & Olds.

**Real Party in Interest**

The real party in interest is Meritor Light Vehicle Technology, L.L.C., the assignee of the entire right and interest in this Application.

**Related Appeals and Interferences**

There are no related appeals or interferences.

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Adjustment date: 01/29/2004 SZEWDIE1

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### **Status of Claims**

Claims 1-11 and 16-25 remain in the application including independent claims 1, 7, and 18. Method claims 12-15 have been withdrawn from consideration. Claims 1-5 stand finally rejected under 35 U.S.C. 102(b) and claims 6-11 and 16-25 stand finally rejected under 35 U.S.C. 103(a). Appellant appeals the rejections of claims 1-11 and 16-25.

### **Status of the Amendments**

All amendments have been entered.

### **Summary of the Invention**

This invention relates to an inductive motor for vehicle applications wherein the rotor and/or stator is formed of a solid body of material. As shown in Figure 1, an assembly 20 includes an AC powered motor 22 having a stator 24 and a rotor 26. The rotor 26 drives a shaft 28, which in turn drives the gear 30. The gear 30 is connected through a mechanism 34 to drive a closure member 36 within a frame 38. The closure member 36 could be a window, a sunroof, a moon roof, or other similar component. Further, in addition to driving closure members, the motor 22 could be used to drive other vehicle components such as seats or other similar components. Paragraph [15], Pages 2-3.

As shown in Figure 2, the rotor 26 and the stator 24 are each formed to have a core 30 with circumferentially spaced conductive areas 32. The present invention manufactures these components such that the cores are generally solid bodies, replacing the separate plates of the prior art. In this embodiment, the rotor 26 and stator 24 are extruded by a two material co-extrusion. The cores 30 are formed of materials that have magnetic properties such as ferro plastics. Nylon 6/6 with iron powder is one preferred example. The conductive areas 32 are preferably formed of conductive plastic. As an example, nylon filled with copper and/or aluminum could be utilized. Paragraph [16], Page 3.

The rotors 26 are formed with a co-extruder such as shown at 34 in Figure 3. A co-extruding machine 36 extrudes a strip 38 of the rotor material. The rotors 26 can then be cut to size. The stators can be made in a similar fashion. Paragraph [17], Page 3.

In embodiment 40 of Figure 4A, the stator 42 has a plurality of spaced teeth 44. Similarly, the rotor 46 has a plurality of spaced teeth 48. The first step in the manufacture is to form the core components by powdered metal technology. The next step, shown in Figure 4B, is to provide an insulation layer 50 around the teeth. Finally, as shown in Figure 4C, conductive material 52 is deposited between the teeth 44 or 48. The conductive material may be aluminum, which is caused to flow into the spaces between the teeth. Paragraphs [18] – [19], Pages 3-4.

With both embodiments, the rotor 26 and/or stator 24 are formed of generally integral core bodies. Conductive material is placed at the circumferentially spaced locations. The invention thus provides the benefit of a relatively low cost AC motor. This facilitates the use of such motors in vehicle applications. Paragraph [20], Page 4.

### **Issues**

Is the final rejection of claims 1-5 under 35 U.S.C. 102(b) proper over the reference of U.S. Patent No. 6,111,334 to Horski et al. (Horski)?

Is the final rejection of claims 6-11 and 16-25 under 35 U.S.C. 103(a) proper over the combination of U.S. Patent No. 6,111,334 to Horski in view of U.S. Patent No. 6,025,663 to Hull et al. (Hull)?

### **Grouping of Claims**

- A. The rejection of independent claim 1 and dependent claims 2 and 4 is contested.
- B. The rejection of dependent claim 3 is separately contested, i.e. claim 3 does not stand or fall with claims 1 or 2.
- C. The rejection of dependent claim 5 is separately contested, i.e. claim 5 does not stand or fall with claims 1 or 4.
- D. The rejection of dependent claim 6 is separately contested, i.e. claim 6 does not stand or fall with claim 1.
- E. The rejection of dependent claim 16 is separately contested, i.e. claim 16 does not stand or fall with claims 1 or 2.

F. The rejection of independent claims 7 and 18 and the rejection of dependent claims 8, 10, 24, and 25 is separately contested, i.e. claims 7, 8, 10, 18, 24 and 25 do not stand or fall with claim 1.

G. The rejection of dependent claim 9 is separately contested, i.e. claim 9 does not stand or fall with claims 7 or 8.

H. The rejection of dependent claim 11 is separately contested, i.e. claim 11 does not stand or fall with claims 7 or 10.

I. The rejection of dependent claims 17 and 19 is separately contested, i.e. claims 17 and 19 do not stand or fall with claims 8 or 18, respectively.

J. The rejection of dependent claim 20 is separately contested, i.e. claim 20 does not stand or fall with claim 19.

K. The rejection of dependent claim 21 is separately contested, i.e. claim 21 does not stand or fall with claim 18.

L. The rejection of dependent claim 22 is separately contested, i.e. claim 22 does not stand or fall with claim 21.

M. The rejection of dependent claim 23 is separately contested, i.e. claim 23 does not stand or fall with claim 18.

### **Patentability Arguments**

Based on the arguments detailed below, the rejections of claims 1-11 and 16-25 are improper and must be withdrawn.

#### **A. Claims 1, 2, and 4**

Claims 1, 2, and 4 stand rejected under 35 U.S.C. 102(b) as being anticipated by Horski. Claim 1 is directed to a motor having a stator body and a rotor body where at least one of the stator and rotor bodies are formed of a generally solid core of a first material and having a plurality of circumferentially spaced portions of a second material at an outer peripheral surface of the core with the second material comprising a conductive material deposited into the portions wherein the second material is more conductive than the first material.

Horski is directed to a brushless direct current (DC) water pump motor. The Horski DC motor fulfills the need for an efficient stator assembly with a divided core, which is configured to isolate the windings from cooling fluid being circulated through the motor. Further, the Horski DC motor fulfills the need for a motor that provides cooling for the bearings, the stator assembly, and the electronic control unit that is coupled to the windings.

The examiner argues that Horski shows a motor with a stator body having a solid core 38 formed of a first material (powder metal/plastic) with a plurality of circumferentially spaced portions 40 having a second material, consisting of plastic, at an outer peripheral surface with a conductive material being deposited between the teeth 36 over the insulating layer that's more conductive than the first material. The examiner further argues that the insulating material is plastic and is placed around the teeth 36 with a conductive material being deposited between the teeth. Appellant disagrees.

Horski does not teach the use of a stator body having a solid core. The stator assembly 32 in Horski is “of the divisible core type.” See column 3, line 1. In fact, Horski is directed to fulfilling the need for providing an efficient stator with a “divided lamination core assembly which is configured to isolate the windings from cooling fluid flowing through the motor.” See column 1, lines 18-21. The Horski stator 32 is formed from a *divisible* core assembly 34 having a plurality of *individual* core members 38 that are spaced apart from each other by gaps 44. Thus, examiner’s interpretation of the Horski stator having a solid core “38” directly contradicts the teachings of Horski.

Further, the stator assembly 32 in Horski does not include a plurality of circumferentially spaced portions. What the examiner argues are the circumferentially spaced portions, i.e., component 40, is actually a single-piece connecting ring that is attached to each of the individual core members 38. Also, claim 1 requires the circumferentially spaced portions to be at an outer peripheral surface of the solid core. It is clear from Figure 3 of Horski that the connecting ring 40 is positioned at an inner peripheral surface of the individual core elements 38, and not an outer peripheral surface as claimed by Appellant.

Finally, the examiner argues that the connecting ring 40 is made from a plastic material that is more conductive than the plastic material that forms the core elements 38, but relies on a

component that is completely separate from the connecting ring 40 to meet the claimed limitation. The examiner argues, “a conductive material is deposited between the teeth (36) over the insulating layer that’s more conductive than the first material.” This argument is confusing at best and does not meet the claimed features set forth in claim 1.

Claim 1 requires the circumferentially spaced portions to be formed of a second material that is more conductive than the first material that forms the core. The individual core elements 38 (which the examiner argues comprises the solid core of a first material as set forth in claim 1) in Horski are formed from a powdered metal. The examiner further argues that connecting ring 40 in Horski is equivalent to the circumferentially spaced portions set forth in claim 1. The connecting ring 40 is made of an insulating material and is preferably plastic. See column 3, lines 14-15 and 23-25. An insulating material is not conductive and thus cannot be more conductive than the core material, which is conductive.

Further, the examiner seems to argue that the conductive material is from a component other than the insulating ring 40, however, the examiner has not identified what this component is. Either way, the examiner’s interpretation of Horski fails to meet the limitation of the circumferentially spaced portions being formed of a second material that is more conductive than the first material that forms the core as set forth in claim 1. Thus, for the several reasons set forth above, Horski clearly does not anticipate claim 1 and the 35 U.S.C. 102(b) rejection must be withdrawn.

#### **B. Claim 3**

Claim 3 stands rejected under 35 U.S.C. 102(b) as being anticipated by Horski. Claim 3 includes the feature of the first and second plastics which form the solid core and the plurality of circumferentially spaced portions, respectively, being co-extruded.

The examiner offers no argument of where in Horski this feature is taught. Further, it would be impossible for the individual core elements 38, which the examiner argues are formed of the first plastic, and the circumferentially spaced portions 40, which the examiner argues are formed from the second plastic, to be co-extruded. Each of these components 38, 40 is a separate, individual piece of the stator assembly 32. The insulating ring 40 is separately formed

from the individual core elements 38. As discussed above, the core elements 38 are individual members that are connected together with the insulating ring 40 after they are formed. Thus, the core elements 38 are not even extruded together. Finally, the preferred method of attachment of the insulating ring 40 is by overmolding the ring 40 onto the surfaces of the individual core elements 38. See column 3, lines 25-28. Horski actually teaches away from any type of co-extrusion method for the core and the circumferentially spaced portions.

Thus, for the reasons set forth above in addition to the arguments set forth in Section A, Horski cannot anticipate claim 3 and the rejection must be withdrawn.

### C. Claim 5

Claim 5 stands rejected under 35 U.S.C. 102(b) as being anticipated by Horski. Claim 5 includes the feature of the plurality of circumferentially spaced portions comprising a plurality of circumferentially spaced teeth having an insulating material formed at least around the circumferentially spaced teeth wherein the conductive material is deposited between the teeth over the insulating material.

The examiner argues that Horski teaches a plurality of circumferentially spaced portions 40. As discussed above, component 40 is an insulating ring and is not comprised of a plurality circumferentially spaced portions. Further, insulating ring 40 does not include anything remotely resembling teeth. The insulating ring 40 in Horski also does not have an insulating material formed around the teeth because Horski is already formed from an insulating material.

The examiner argues, “a conductive material is deposited between the teeth (36) over the insulating layer that’s more conductive than the first material.” This argument is confusing at best and does not meet the claimed features set forth in claim 5.

First, the examiner is contradicting the argument set forth with regard to claim 1. The examiner has argued that the plurality of circumferentially spaced portions is formed from insulating ring 40, however, the examiner is now arguing that the circumferentially spaced portions comprise teeth 36. Component 36 is a different, separate component from insulating ring 40.

Second, component 36 in Horski is not toothed, i.e. is not comprised of “teeth.” Component 36 in Horski is clearly described as being the windings that are wound around the individual core elements 38. Horski simply does not teach the formation of a solid core having a plurality circumferentially spaced portions that are comprised of a plurality of circumferentially spaced teeth.

Thus, for the reasons set forth above in addition to the arguments set forth in Section A, Horski cannot anticipate claim 5 and the rejection must be withdrawn.

#### D. Claim 6

Claim 6 stands rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Horski in view of Hull. Claim 6 includes the feature of the motor being an (alternating current) AC powered motor.

Horski clearly discloses the use of a DC motor, not an AC motor. See column 2, lines 51-53. Hull also does not teach the use of an AC motor. The examiner argues that Hull teaches the use of an AC motor for driving a vehicle component, however, there is no mention of an AC motor in Hull. Appellant respectfully requests an indication of where in Hull teaches the use of an AC motor having the claimed structure set forth in claims 1 and 6.

Further, there is no motivation or suggestion to modify Horski with the teachings of Hull. The examiner argues that it would be obvious “to modify the electric motor of Horski with the teaching of Hull electric motor for the purpose of utilizing a different locking technique which allows the use of a smaller motor and no gear box to achieve the same useful results as a worm wheel drive system at considerably less cost.” The examiner’s argument has no relevance to claim 6, cannot be supported in light of the teachings of the references, and fails on every level as being proper motivation or suggestion to satisfy a *prima facie* case of obviousness.

Horski teaches the use of a DC water pump-motor that is specially designed to have a divided core that is configured to isolate the windings from cooling fluid flowing through the motor. See column 1, lines 18-21. Hull teaches the use of an electric motor having a specially designed braking and locking mechanism for preventing movement of a closure member under predetermined conditions. These motor applications are very different from one another. There

would be absolutely no motivation to modify the DC water pump-motor of Horski with motor teachings of Hull to achieve the invention set forth in claim 6.

Further, the examiner seems to be arguing that it would be obvious to modify the Horski motor with the locking mechanism of Hull. This has nothing to do with Appellant's claims. Appellant is not claiming a locking device. Further, there is no indication in either reference that a water pump-motor would need a braking or locking mechanism as taught by Hull. Thus, there would be no benefit to modify Horski to include the Hull locking mechanism.

Even assuming, *arguendo*, that Horski could be modified with the teachings of Hull, the only modification that might make sense would be to use the electric motor of Hull in place of the electric motor of Horski. However, this modification would clearly defeat the benefits achieved by the Horski motor with regard to the specific cooling structure. Such a modification would render Horski unsatisfactory for Horski's intended purpose and would change the principle of operation of Horski. The examiner's proposed modification cannot render the prior art unsatisfactory for its intended purpose and cannot change the principle of operation of the base reference. See MPEP 2143.01.

The examiner has pointed to no teaching in Hull of any particular benefit to using the Hull motor in place of the Horski motor. In addition, there is nothing in Horski that would have led one of ordinary skill in the art to believe that Horski's motor was in any way deficient for Horski's purposes or was in need of modification, especially as the Horski motor was specifically designed to achieve a beneficial cooling structure.

Thus, for the reasons set forth above in addition to the arguments set forth in Section A, claim 6 is patentable over the combination of Horski and Hull and the rejection must be withdrawn.

#### **E. Claim 16**

Claim 16, which depends from claim 2, stands rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Horski in view of Hull. Claim 16 includes the feature of the first plastic being comprised of a ferro plastic and the second plastic being comprised of a nylon filled with a conductive metal.

As set forth in the claims, the first plastic forms the solid core and the second plastic forms the plurality of circumferentially spaced portions of the core. The examiner's argument is that the individual core elements 38 are equivalent to the solid core and the insulating ring 40 is equivalent to the plurality of circumferentially spaced portions. Horski teaches that the core elements 38 are formed from a powdered metal and that the insulating ring is formed from plastic.

With regard to claim 16, the examiner argues that the selection of material based upon its suitability for the intended use is a design consideration within the ordinary skill in the art. This argument clearly ignores the limitations of claim 16 in light of the reference teachings. Appellant claims that the circumferentially spaced portions are formed from a plastic comprising a nylon filled with a conductive metal. Horski clearly describes component 40, which the examiner equates to the claimed circumferentially spaced portions, as being an "insulating" component that is formed from plastic. There is absolutely no teaching in Horski that this insulating ring 40 is filled with conductive metal. The use of a nylon material filled with conductive metal would be *unsuitable* for use in the connecting ring 40 of Horski. Thus, the examiner's argument with regard to claim 16 is contradicts the teachings of Horski.

Thus, for the reasons set forth above in addition to the arguments set forth in Sections A and D, claim 16 is patentable over the combination of Horski and Hull and the rejection must be withdrawn.

#### F. Claims 7, 8, 10, 18, 24, and 25

Claims 7, 8, 10, 18, 24, and 25 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Horski in view of Hull. Claim 7 is directed to a vehicle component drive assembly having a vehicle component movable between a plurality of operational positions relative to a fixed vehicle component and an AC motor for driving the component wherein the AC motor includes a rotor and a stator, with at least one of the rotor and the stator having a core body formed of a first material and a plurality of circumferentially spaced conductive areas formed of a second material that is more conductive than the first material.

For the reasons set forth above in Section A, the stator of Horski does not have a core body having a plurality of circumferentially spaced areas formed of a material that is more conductive than the core body material. Hull also does not disclose, suggest, or teach this feature.

Further, claim 7 requires an AC motor to drive the vehicle component. Horski clearly discloses the use of a DC motor, not an AC motor. See column 2, lines 51-53. Hull also does not teach the use of an AC motor. The examiner argues that Hull teaches the use of an AC motor for driving a vehicle component, however, there is no mention of an AC motor in Hull. Appellant respectfully requests that the examiner indicate how Hull teaches the use of an AC motor having the claimed structure set forth in claim 7.

Finally, for the reasons set forth above in Section D, there is no motivation or suggestion to modify Horski with the teachings of Hull. Even assuming, *arguendo*, that Horski could be modified with the teachings of Hull, the only modification that might make sense would be to use the electric motor of Hull in place of the electric motor of Horski. However, this modification would clearly defeat the benefits achieved by the Horski motor with regard to the specific cooling structure. Such a modification would render Horski unsatisfactory for Horski's intended purpose and would change the principle of operation of Horski. The examiner's proposed modification cannot render the prior art unsatisfactory for its intended purpose and cannot change the principle of operation of the base reference. See MPEP 2143.01.

Further, the Hull motor clearly does not disclose the rotor and stator structure that is set forth in claim 7. There is absolutely no teaching or disclosure in Hull of a rotor or stator having a solid core formed from a first material with a plurality of circumferentially spaced portions formed of a second material that is more conductive than the first material. For the reasons set forth in Section A, Horski also does not teach such a structure, as the material the examiner argues forms the more conductive material of the circumferentially spaced portions 40, is solely an insulating material.

The examiner has pointed to no teaching in Hull of any particular benefit to using the Hull motor in place of the Horski motor. In addition, there is nothing in Horski that would have led one of ordinary skill in the art to believe that Horski's motor was in any way deficient for

Horski's purposes or was in need of modification, especially as the Horski motor was specifically designed to achieve a beneficial cooling structure.

For similar reasons to those set forth above, independent claim 18 is also allowable over the combination of Horski and Hull. Thus, for the reasons set forth above in addition to the arguments set forth in Sections A and D, claims 7, 8, 10, 18, 24 and 25 are patentable over the combination of Horski and Hull and the rejection must be withdrawn.

#### **G. Claim 9**

Claim 9 stands rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Horski in view of Hull. Claim 9 includes the feature of the first and second plastics being co-extruded.

The examiner offers no argument of where in Horski or Hull this feature is taught. The examiner simply states that the claim language is given little patentable weight. The examiner has fallen back on this dismissive argument because the limitation of claim 9 cannot be found anywhere in the cited references. The Hull motor does not have any of the structural features set forth in the claims, thus there is no teaching of a motor with Appellant's claimed structure being extruded in Hull.

Further, it would be impossible for the Horski motor to be produced from an extrusion process. It would be impossible for the individual core elements 38, which the examiner argues are formed of the first plastic, and the circumferentially spaced portions 40, which the examiner argues are formed from the second plastic, to be co-extruded. Each of these components 38, 40 is a separate, individual piece of the stator assembly 32. The insulating ring 40 is separately formed from the individual core elements 38. As discussed above, the core elements 38 are individual members that are connected together with the insulating ring 40 after they are formed. Thus, the core elements 38 themselves would not even be extruded together. Finally, the preferred method of attachment of the insulating ring 40 is by overmolding the ring 40 onto the surfaces of the individual core elements 38. See column 3, lines 25-28. By disclosing overmolding as the preferred process, Horski actually teaches away from any type of co-extrusion method for the core and the circumferentially spaced portions. Even the "little

patentable weight" afforded claim 9 by the examiner is clearly sufficient to overcome the Horski and Hull references, which teach away from the claimed features.

Thus, for the reasons set forth above in addition to the arguments set forth in Sections A D, and F, claim 9 is patentable over the combination of Horski and Hull and the rejection must be withdrawn.

#### **H. Claim 11**

Claim 11 stands rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Horski in view of Hull. Claim 11 includes the feature of the plurality of circumferentially spaced conductive areas comprising a plurality of circumferentially spaced teeth having an insulating material formed at least around the circumferentially spaced teeth wherein the second material is deposited between the teeth over the insulating material.

The examiner argues that Horski teaches a plurality of circumferentially spaced portions 40. As discussed above, component 40 is an insulating ring and is not comprised of a plurality circumferentially spaced portions. Further, insulating ring 40 does not include anything remotely resembling teeth. The insulating ring 40 in Horski also does not have an insulating material formed around the teeth because Horski is already formed from an insulating material.

The examiner argues, "a conductive material is deposited between the teeth (36) over the insulating layer that's more conductive than the first material." This argument is confusing at best and does not meet the claimed features set forth in claim 11.

First, the examiner is contradicting the argument set forth with regard to claim 7. The examiner has argued that the plurality of circumferentially spaced portions is formed from insulating ring 40, however, the examiner is now arguing that the circumferentially spaced portions comprise teeth 36. Component 36 is a different, separate component from insulating ring 40.

Second, component 36 in Horski is not toothed, i.e. is not comprised of "teeth." Component 36 in Horski is clearly described as being the windings that are wound around the individual core elements 38. Horski simply does not teach the formation of a solid core having a

plurality circumferentially spaced portions that are comprised of a plurality of circumferentially spaced teeth.

Further, claim 11 requires the second, more conductive material to be deposited over the insulating material and between the teeth. The individual core elements 38 (which the examiner argues comprises the solid core of a first material as set forth in claim 7) in Horski are formed from a powdered metal. The examiner further argues that connecting ring 40 in Horski is equivalent to the circumferentially spaced portions set forth in claim 7. The connecting ring 40 is made of an insulating material and is preferably plastic. See column 3, lines 14-15 and 23-25. An insulating material is not conductive and thus cannot be more conductive than the core material, which is conductive.

Thus, for the reasons set forth above in addition to the arguments set forth in Sections A D, and F, claim 11 is patentable over the combination of Horski and Hull and the rejection must be withdrawn.

### I. Claims 17 and 19

Claims 17 and 19 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Horski in view of Hull. Claims 17 and 19 include the features of the first plastic being comprised of a ferro plastic and the second plastic being comprised of a nylon filled with a conductive metal.

As set forth in the claims, the first plastic forms the solid core and the second plastic forms the plurality of circumferentially spaced portions of the core. The examiner's argument is that the individual core elements 38 are equivalent to the solid core and the insulating ring 40 is equivalent to the plurality of circumferentially spaced portions. Horski teaches that the core elements 38 are formed from a powdered metal and that the insulating ring is formed from plastic.

With regard to claim 17, the examiner argues that the selection of material based upon it's suitability for the intended use is a design consideration within the ordinary skill in the art. This argument clearly ignores the limitations of claim 17 in light of the reference teachings. Appellant claims that the circumferentially spaced portions are formed from a plastic comprising

a nylon filled with a conductive metal. Horski clearly describes component 40, which the examiner equates to the claimed circumferentially spaced portions, as being an “insulating” component that is formed from plastic. There is absolutely no teaching in Horski that this insulating ring 40 is filled with conductive metal. The use of a nylon material filled with conductive metal would be *unsuitable* for use in the connecting ring 40 of Horski. Thus, the examiner’s argument with regard to claim 17 contradicts the teachings of Horski.

Thus, for the reasons set forth above in addition to the arguments set forth in Sections A D, and F, claims 17 and 19 are patentable over the combination of Horski and Hull and the rejection must be withdrawn.

#### **J. Claim 20**

Claim 20 stands rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Horski in view of Hull. Claim 20 includes the feature of the first and second materials being simultaneously formed together within a common co-extruder.

The examiner offers no argument of where in Horski or Hull this feature is taught. The examiner simply states that the claim language is given little patentable weight. The examiner has fallen back on this dismissive argument because the limitation of claim 20 cannot be found anywhere in the cited references. The Hull motor does not have any of the structural features set forth in the claims, thus there is no teaching of a motor with Appellant’s claimed structure being extruded in Hull.

Further, it would be impossible for the Horski motor to be produced from an extrusion process. It would be impossible for the individual core elements 38, which the examiner argues are formed of the first plastic, and the circumferentially spaced portions 40, which the examiner argues are formed from the second plastic, to be co-extruded. Each of these components 38, 40 is a separate, individual piece of the stator assembly 32. The insulating ring 40 is separately formed from the individual core elements 38. As discussed above, the core elements 38 are individual members that are connected together with the insulating ring 40 after they are formed. Thus, the core elements 38 themselves would not even be extruded together. The preferred method of attachment of the insulating ring 40 is by overmolding the ring 40 onto the surfaces of

the individual core elements 38. See column 3, lines 25-28. By disclosing overmolding as the preferred process, Horski actually teaches away from any type of co-extrusion method for the core and the circumferentially spaced portions.

Finally, claim 20 includes the feature of simultaneous formation of the first and second within a common co-extruder. Neither Horski nor Hull teach the use of any type of extruder component. Further, neither reference teaches simultaneous formation of the solid core and circumferentially spaced portions within an extruder. Even the “little patentable weight” afforded claim 20 by the examiner is clearly sufficient to overcome the Horski and Hull references, which teach away from the claimed features.

Thus, for the reasons set forth above in addition to the arguments set forth in Sections A D, and F, claim 20 is patentable over the combination of Horski and Hull and the rejection must be withdrawn.

#### **K. Claim 21**

Claim 21 stands rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Horski in view of Hull. Claim 21 includes the feature of an insulating layer formed between said first and second materials.

The examiner argues that individual core elements 38 are comprised of the first material and that the connecting ring 40 is comprised of the second material. The connecting ring 40 itself is formed from an insulating material. There is no further insulating layer in Horski that is positioned between the ring 40 and the core elements 38.

Appellant’s invention clearly defines both the first and second materials as being conductive and claim 21 adds the feature of an insulating layer between the two conductive materials. This configuration is simply not taught by Horski.

Thus, for the reasons set forth above in addition to the arguments set forth in Sections A D, and F, claim 21 is patentable over the combination of Horski and Hull and the rejection must be withdrawn.

## L. Claim 22

Claim 22 stands rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Horski in view of Hull. Claim 22 includes the feature of plurality of the circumferentially spaced conductive portions comprises a plurality of circumferentially spaced teeth separated from each other by spatial areas and wherein the first material comprises a powder metal with the insulating layer being formed at least about the teeth and said second material comprises a conductive metal that at least partially fills the spatial areas.

The examiner argues that Horski teaches a plurality of circumferentially spaced portions 40. As discussed above, component 40 is an insulating ring and is not comprised of a plurality circumferentially spaced portions. Further, insulating ring 40 does not include anything remotely resembling teeth. The insulating ring 40 in Horski also does not have an insulating material formed around the teeth either because the ring 40 in Horski is already formed from an insulating material.

The examiner also argues that a conductive material is “deposited between the teeth (36) over the insulating layer that’s more conductive than the first material.” The examiner has previously argued that the plurality of circumferentially spaced portions is formed from insulating ring 40, however, the examiner is now arguing that the circumferentially spaced portions are comprised of a component 36 that is separate from the insulating ring. Component 36 in Horski is not toothed, i.e. is not comprised of “teeth.” Component 36 is Horski is clearly described as being the windings that are wound around the individual core elements 38.

Further, claim 22 requires the second, more conductive material to fill the spatial areas between the teeth. Under the examiner’s interpretation this would mean that an insulating later would be formed about the teeth, i.e. windings, and a conductive material would then fill the spaces between the teeth, which are already conductive. This simply does not make any sense.

Thus, for the reasons set forth above in addition to the arguments set forth in Sections A D, and F, claim 22 is patentable over the combination of Horski and Hull and the rejection must be withdrawn.

### M. Claim 23

Claim 23 stands rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Horski in view of Hull. Claim 23 includes the feature of *both* the rotor and the stator having the core body portion formed of the first material and the plurality of circumferentially spaced portions formed of the second material.

This combination is clearly not taught by either reference. All of the examiner's arguments refer to the formation of the stator assembly. The examiner has not presented any arguments directed to the formation of the rotor. The rotor is Horski is formed with conventional permanent magnets formed on the outer periphery of the body. There is no teaching of a solid core rotor having a plurality of circumferentially spaced portions as set forth in claim 18.

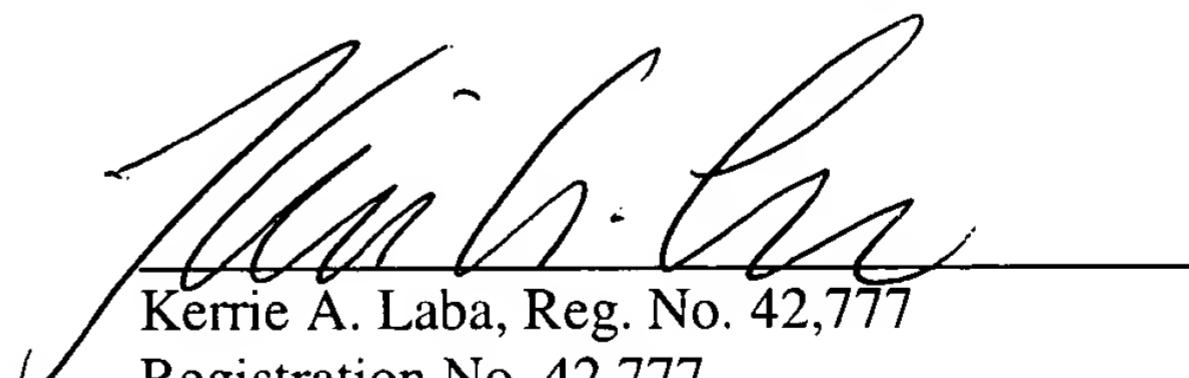
Thus, for the reasons set forth above in addition to the arguments set forth in Sections A D, and F, claim 23 is patentable over the combination of Horski and Hull and the rejection must be withdrawn.

### Closing

For the reasons set forth above, the rejection of all claims is improper and should be reversed. Appellant earnestly requests such an action.

Respectfully submitted,

CARLSON, GASKEY & OLDS

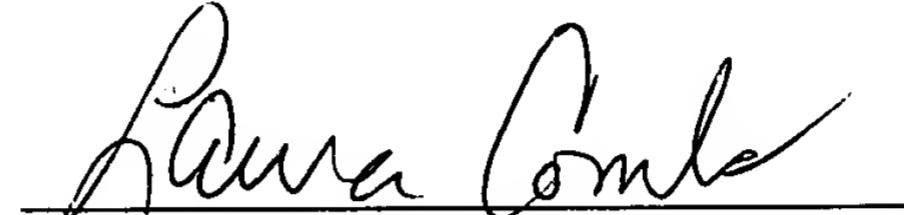


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Dated: January 14, 2004

CERTIFICATE OF MAILING

I hereby certify that the attached Appeal Brief is being deposited in triplicate with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to Box AF, Assistant Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 14th day of January, 2004.

  
Laura Combs

## CLAIM APPENDIX

1. A motor comprising:
  - a stator body;
  - a rotor body; and

at least one of said stator and rotor bodies being formed of a generally solid core of a first material and having a plurality of circumferentially spaced portions of a second material at an outer peripheral surface of said core, said second material comprising a conductive material deposited into said portions wherein said second material is more conductive than said first material.
2. A motor as set forth in Claim 1, wherein said first material comprises a first plastic and said second material comprises a second plastic different than said first plastic.
3. A motor as set forth in Claim 2, wherein said first and second plastics are co-extruded.
4. A motor as set forth in Claim 1, wherein said first material comprises a powder metal.
5. A motor as set forth in Claim 4, wherein said plurality of circumferentially spaced portions comprise a plurality of circumferentially spaced teeth having an insulating material formed at least around said circumferentially spaced teeth wherein said conductive material is deposited between said teeth over said insulating material.
6. A motor as set forth in Claim 1, wherein said motor is an AC powered motor.

7. A vehicle component drive assembly comprising:  
a vehicle component movable between a plurality of operational positions relative to a fixed vehicle component;  
an AC motor for driving said component; and  
said AC motor including a rotor and a stator, with at least one of said rotor and said stator having a core body formed of a first material and a plurality of circumferentially spaced conductive areas formed of a second material that is more conductive than said first material.
8. A vehicle component drive assembly as set forth in Claim 7, wherein said first material comprises a first plastic and said second material comprises a second plastic different than said first plastic.
9. A vehicle component drive assembly as set forth in Claim 8, wherein said first and second plastics are co-extruded.
10. A vehicle component drive assembly as set forth in Claim 7, wherein said first material comprises a powder metal.
11. A vehicle component drive assembly as set forth in Claim 10, wherein said plurality of circumferentially spaced conductive areas comprise a plurality of circumferentially spaced teeth having an insulating material formed at least around said circumferentially spaced teeth wherein said second material is deposited between said teeth over said insulating material.

12.-15. (Withdrawn)

16. A motor as set forth in Claim 2, wherein said first plastic comprises a ferro plastic and said second plastic comprises nylon filled with a conductive metal.

17. A vehicle component drive assembly as set forth in Claim 8, wherein said first plastic comprises a ferro plastic and said second plastic comprises nylon filled with a conductive metal.

18. A vehicle component drive assembly comprising:  
a vehicle component movable between a plurality of operational positions relative to a fixed vehicle component;  
an AC motor having a motor output shaft operably coupled to said vehicle component to move said vehicle component between said operational positions, said motor including a stator and a rotor cooperating to drive said motor output shaft; and  
wherein at least one of said stator and rotor comprises a generally solid core body portion formed of a first material and a plurality of circumferentially spaced conductive portions formed of a second material different than said first material wherein said second material has a greater conductivity than said first material.

19. A vehicle component drive assembly as set forth in claim 18, wherein said first material comprises a ferro plastic and said second material comprises nylon filled with a conductive metal.

20. A vehicle component drive assembly as set forth in claim 19, wherein said first and second materials are simultaneously formed together within a common co-extruder.

21. A vehicle component drive assembly as set forth in claim 18 including an insulating layer formed between said first and second materials.

22. A vehicle component drive assembly as set forth in claim 21, wherein said plurality of circumferentially spaced conductive portions comprises a plurality of circumferentially spaced teeth separated from each other by spatial areas and wherein said first material comprises a powder metal with said insulating layer being formed at least about said teeth and said second material comprises a conductive metal that at least partially fills said spatial areas.

23. A vehicle component drive assembly as set forth in claim 18 wherein both said rotor and said stator include said core body portion formed of said first material and said plurality of circumferentially spaced portions formed of said second material.
24. A vehicle component drive assembly as set forth in claim 18 wherein said vehicle component comprises a closure member and said fixed vehicle component comprises a frame.
25. A vehicle component drive assembly as set forth in claim 24 wherein said motor output shaft is in direct driving engagement with a gear assembly that is operably coupled to said closure member.